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ABSTRACT

This report summarizes a study of the effectiveness of the National Science Foundation's Research Opportunities for Women (ROW) program in encouraging female scientists and engineers to initiate research careers. Study findings are based on telephone interviews conducted with 657 ROW-eligible women: 255 who applied through the ROW program, 302 who applied through regular National Science Foundation (NSF) disciplinary programs, and 100 who had never applied. The program provides an alternative entry point for proposals to NSF from women seeking their first Federal research grant or from women whose research career has been interrupted for 2 of the previous 5 years. The report outlines the survey and sampling strategy and discusses results in terms of program attraction, impact of proposal decision, differences among applicant groups and nonapplicants, support from non-NSF sources, proposal preparation assistance, perceptions of ROW and NSF, career development, and suggestions for improving NSF support of female scientists and engineers. The study found that the program was successful in attracting women who had not previously submitted research proposals to NSF, and that ROW principally benefits young female researchers who are substantively ready to conduct sponsored research but relatively unsophisticated about the process of obtaining a Federal grant. An appendix contains a copy of the survey form. (JDD)

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National Science Foundation
Report 90-13

January 1990

NSF'S RESEARCH OPPORTUNITIES FOR WOMEN PROGRAM:
An Assessment of the First Three Years

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A Report by
NSF's Program Evaluation Staff

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NSF 90-13
January 1990

NSF's Research Opportunities for Women Program: An Assessment of the First Three Years

I. Summary

This report summarizes a study of the effectiveness of NSF's Research Opportunities for Women (ROW) program in encouraging female scientists and engineers to initiate research careers. The study addressed the program's impact on women funded in fiscal years 1985 through 1987 and examined the characteristics and views of ROW-eligible women.

Begun at the start of FY 1985, ROW provides an alternative entry point for proposals to NSF from women seeking their first Federal research grant (and since FY 1986, also for those whose research career has been interrupted for two of the previous five years). ROW research initiation proposals are competitively reviewed in the same manner as proposals submitted directly to regular NSF discipline-based programs. In FY 1985, ROW awards were funded from a separate budget; in FYs 1986 and 1987 they were funded from "target" funds set aside by disciplinary research.

Study findings are based on telephone interviews conducted in late 1988 and early 1989 with 657 ROW-eligible women: 255 who applied through the ROW program, 302 who applied through regular NSF disciplinary programs (referred to in this report as "direct applicants"), and 100 who have never applied. ROW was expanded in FY 1987 to include planning grants and career advancement grants; these components were not addressed by the study.

The principal findings are presented in two parts: those concerning the program itself, and those about ROW-eligible women in general, whether or not they were applicants to ROW.

Findings about the ROW program itself:

- The program succeeded in attracting women who had not previously submitted research proposals to NSF. Sixty percent had never applied to NSF and 83% had never been funded as a Principal Investigator or co-PI on any Federal grant.

- The transition of many women to sponsored research activities was accelerated by ROW. Forty-four percent of ROW applicants said that the existence of the program was "very important" and 16% said it was "moderately important" in their decision to submit a proposal when they did.

- ROW principally benefits young female researchers who are substantively ready to conduct sponsored research but relatively unsophisticated about the process of obtaining a Federal grant. Eligible women who are more familiar with proposal preparation and review activities tend to apply directly to regular programs.

- Almost one-third of the initial ROW awardees subsequently received another, non-ROW research grant from NSF in the relatively short time between October 1987 and the time of their interview; in addition, 13% of those who were declined by ROW later won direct program grants from NSF.

- For the grantee, the benefits of receiving an ROW grant are about the same as those of receiving one's first NSF grant by applying directly: aside from the resources to undertake the work, professional standing among colleagues is improved and chances of obtaining tenure or promotion are enhanced.

- Most women who applied through ROW rather than directly to a disciplinary program did so because they felt that ROW gave them a better chance of success in obtaining a grant. (Due to the budgetary circumstances described below, however, initial ROW award rates turned out to be much lower than expected and did not equal the rate for direct submissions until the third year).

Principal Findings about ROW-Eligible Women in General:

- Three distinct career paths were evident, which helped explain different levels of participation in sponsored research activities among ROW-eligible women:

  -- direct applicants showed the greatest involvement in research-related activities, including participation as reviewers of NSF proposals, persistence in application to NSF, and a higher level of proposal and award activity with other sponsors;

  -- ROW applicants were less knowledgeable about the research enterprise (e.g., less likely to have contacted a program officer before submitting a proposal and less likely to have served as a reviewer); and

-- nearly three-quarters of the nonapplicants were in primarily teaching positions, compared with 40% of the ROW and direct applicants.

- Of all respondents, nearly half believed that they were at a disadvantage compared to men when applying for research grants from NSF. Declinees (whether they applied to ROW, or directly) and nonapplicants were more likely than awardees to perceive a disadvantage. While the reasons for the perception differed widely, in general they related to low numbers of women in their field and isolation from the research "network".

- About 60% of direct applicants were aware of ROW before being interviewed for the study, compared with only one-third of the nonapplicants.

- Almost half of the women who knew about ROW expressed concern that an ROW award was not considered fully equivalent to a regular NSF award by their colleagues (i.e., they perceived a "stigma"); however, this perception did not affect their willingness to submit an ROW proposal or to recommend the program to others.

  -- concern about "stigma" was most prominent among women in the physical sciences (65%) and mathematics (52%), and less often mentioned by women in the biological (40%) and behavioral (40%) sciences and engineering (35%).

  -- nearly all of the ROW awardees and most of the ROW declinees would recommend the program to eligible women.

- ROW-eligible women in general were applying for, and receiving, support more frequently from non-NSF sources than from NSF. The main alternatives were private foundations, the National Institutes of Health, and State-level sources.

- Of the six major impediments faced by respondents who would like to spend more time conducting research (availability of funding, committee assignments, excessive teaching load, other administrative duties, inadequate clerical support, and family responsibilities), family responsibilities was cited two to four times more often than the other categories as being more of a problem for women than men.

- Sixty-nine percent of ROW applicants were untenured when they applied, as were 47% of direct applicants (not all, however, were in tenure-track positions at that time).

Comments:

(1) New researchers have a limited number of years in which to develop an adequate research portfolio to present to tenure committees. The earlier that the first significant grant is received, the more time there is to prove research production potential. In giving female faculty who are somewhat less knowledgeable and skillful in maneuvering through the sponsored research arena an additional opportunity to obtain research support, ROW increases their readiness to compete in other NSF and non-NSF programs.

(2) As will be shown below, ROW applicants actually experienced a much lower award rate than female applicants in general during the first two years of the ROW program because of an unexpectedly high proposal level. In FY 1987, however, success rates were the same; in fact, ROW proposals in the middle range of reviewer ratings stood a better chance of being funded than those from women who applied directly, and both had a slightly better chance than proposals from first-time male applicants.

II. Program History and Proposal/Award/Funding Data

The predecessor to ROW, a program titled "National Research Opportunity Grants" (NROG), was authorized by the Congress in December 1980 as one of several activities designed to provide equal opportunity and full talent development for women and minorities interested in science and engineering careers (Science and Technology Equal Opportunities Act, 42 U.S.C. 1885).

No funds had been requested in the FY 1981 budget, so $5 million was reprogrammed from other research activities to begin the NROG program. The FY 1982 budget submitted by the outgoing Carter administration requested $5 million, but that funding and the FY 1981 funds were eliminated by the incoming Reagan administration.

In January 1984, with Reagan administration approval, NSF proposed a slightly different program (ROW) to the Congress to begin in FY 1985. Because the full extent of proposal demand was uncertain, the Foundation included $500,000 in the FY 1985 budget to fund 8 to 10 proposals, and $1 million in the FY 1986 budget to continue the FY 1985 awards and to make 8-10 additional awards. NSF staff recognized that these amounts might prove to be inadequate but believed that lower amounts were more likely to win Administration and Congressional approval for beginning the program.

In its first year the program was swamped with 404 proposals (Table 1), of which 42 were awarded. The low award rate (10%) reflected the low budget request, even though the ROW budget was then augmented by moving funds from regular programs.

Due to the unexpectedly high proposal load and a shift in management philosophy toward more responsibility for targeted efforts by regular programs, ROW funding was decentralized to research directorates in FY 1986 and 1987. The number of proposals dropped sharply in FY 1986 (to 176) but picked up again in FY 1987 to 267. Whether the FY 1985-86 drop reflected an initial surge of pent-up demand or the change in management strategy could not be determined from survey responses.

TABLE 1
Female PI Proposal and Award History

	Total 1985-1987	FY 1985	FY 1986	FY 1987
Submitted to ROW:				
Proposals	1,341	404	176	267
Awards	265	42	44	77
Award Rate	20%	10%	25%	29%
Directly Submitted:				
Proposals	4,480	1,499	1,475	1,506
Awards	1,350	495	423	432
Award Rate	30%	33%	29%	29%

Figures are for competitively-reviewed research proposals awarded or declined during each fiscal year from all female applicants at academic institutions (not only ROW-eligible women).

III. Survey and Sampling Strategy

Sample selection procedures and interview screening questions were designed to ensure comparability in terms of ROW program eligibility among sample groups. Where appropriate, comparisons are made among five sample groups: ROW awardees and declinees, direct awardees and declinees, and female faculty members who had not submitted proposals to NSF (Table 2). By fields of research, the sample was drawn to approximate that of reviewed proposals received from female PIs (see Appendix B). A summary of the sampling and interview procedures is provided in Appendix A.

Table 2
Sample Groups Interviewed

Proposal Type	Award	Decline	Total
Submitted to ROW	111	144	255
Directly submitted	152	150	302
Nonapplicant	N/A	N/A	100
Total	263	294	657

IV. Results

A. ROW Program Attraction

Sixty percent of the ROW applicants had never applied for an NSF grant, and 83% had never been funded as a Principal Investigator or co-PI on any Federal grant. The major reasons for not submitting proposals to NSF earlier were related to career status: either they were new Ph.Ds or had previously been in a nonacademic position. A fifth of ROW applicants were returning from a career interruption (primarily family-related).

The ROW program was most successful in attracting applicants in the fields of biological sciences (68% first-time NSF applicants), behavioral sciences (64%), and geosciences (63%). Three-fifths of the women who applied through ROW did so because they felt that the program gave them a better chance of success in obtaining a grant than applying directly.

Forty-four percent of ROW applicants said that the existence of ROW was "very important" in their decision to submit a research proposal when they did. Another 16% said ROW was "moderately important". ROW was "not important" for the timing of 26% of the ROW applicants' submissions. These women probably would have submitted a direct research proposal at about the same time, in the absence of the ROW program.

ROW applicants who responded that the existence of ROW was "very important" were more likely to be in the physical sciences (64%) than the behavioral sciences (44%), biological sciences (39%), or mathematics (39%).

B. Impact of Proposal Decision

An ROW award had numerous effects on the recipient, most significantly encouraging her to seek further funding (65%), increasing her ability to spend time doing research (61%), increasing the respect of her colleagues (58%), enhancing her publication record (56%), and helping her understand the NSF proposal process (53%). These effects were similar to those reported by women who received a regular program award.

One of the goals of ROW was to give women with limited research background an alternative path to funding, with the expectation that as first-time grantees they would then continue their research activities with non-ROW funding. Nearly a third of ROW awardees reported receiving a subsequent research grant from an NSF disciplinary program between October 1987 and the time of the interview (late 1988 and early 1989). In addition, 13% of ROW declinees reported receiving an NSF award during the period.

Most of the ROW applicants who later received regular disciplinary grants said they had positive experiences with ROW.

(The study did not ask whether ROW applicants had subsequently received grants from other Federal agencies).

For ROW declinees, the major positive effects of preparing and submitting a proposal were that doing so provided good proposal writing experience (29%) and increased understanding of the NSF review process (21%). Nearly a third reported that the decline discouraged them from seeking further research funding. Several declinees (and some awardees) reported that they learned how to write a good proposal, how to focus their research ideas, and when and how to apply for funding.

When applicants were declined, they took a variety of actions. Nearly 40% of ROW and direct declinees contacted NSF to learn more about the decision not to grant them an award. All groups were likely to continue research activities despite their declinations. However, direct declinees were almost twice as likely as ROW declinees to resubmit a revised proposal to NSF. ROW declinees tended to seek funding elsewhere and to continue working on their research ideas without funding more often than direct declinees.

C. Differences Among Applicant Groups and Nonapplicants

Despite sample selection based on ROW eligibility, the ROW, direct and nonapplicant groups differed substantially on three career development factors:

- Institutional level: 78% of the ROW and direct applicants, but only 57% of nonapplicants, were employed by graduate research institutions, i.e., institutions that were classified by NSF as ineligible for the Predominantly Undergraduate Institution (PUI) designation. For applicants, this proportion was consistent among those awarded and declined. (Respondents from PUIs served as NSF panel or mail reviewers significantly less often than women at graduate research institutions).

- Position type: about 60% of the ROW and direct samples, but only 17% of the nonapplicants, were in primarily research positions.

- Tenure status: half of the direct and nonapplicant groups, but only a third of the ROW sample, was tenured.

In terms of career advancement, nonapplicants resembled direct applicants more than they did ROW applicants in that they were more likely to have tenure. Thus, while the nonapplicants have advanced professionally, fewer have done so by performing research.

Direct and ROW applicants also differed in several respects:

- o direct applicants had more experience with NSF than the ROW sample; they submitted more proposals and had served more often as reviewers of NSF proposals.

- o a separate analysis using the NSF proposal data base shows that the average length of time from receipt of highest degree to first proposal submittal to NSF was 7.1 years for ROW applicants and 6.3 years for direct applicants.

D. Support from Non-NSF Sources

Non-NSF sponsorship was more common than NSF support among all sample groups. The variety of funding sources causes confusion among some female applicants; about one-quarter of the awardees and over one-third of declinees said that they had some difficulty understanding the differences between the types of research supported by NSF and by other Federal agencies. Women in the biosciences and geosciences were most likely to experience confusion, while those in engineering were least likely to do so.

Nonapplicants submit less than half as many proposals to sponsors other than NSF as applicants do, and average fewer non-NSF awards. They are much less likely than applicants to have been either panel or mail reviewers for NSF. Although they expressed an interest in doing research, nearly three-quarters were in primarily teaching positions, compared with about one-quarter of direct, and about one-third of ROW, applicants.

E. Proposal Preparation Assistance

In preparing their proposals, ROW and direct applicants most frequently used: the NSF proposal preparation guide (known as GRESE--Grants for Research and Education in Science and Engineering) (81%), budget advice (74%), clerical assistance (73%), and review by a colleague (72%).

- o Awardees were more likely than declinees to have discussed their proposal with an NSF program officer before submitting it, and to have examined successful NSF proposals.

- ROW awardees were more likely than direct awardees to have consulted GRESE and received content, format, or presentation review from a colleague. Direct awardees were more likely than ROW awardees to have received clerical support and budget preparation advice, to have discussed proposal ideas with an NSF program officer, and to have used reviewer comments from previously declined proposals.

When asked which forms of assistance were most useful, respondents overall listed: review by a colleague prior to submittal (42%), examination of a successful proposal (19%), budget preparation advice (19%), and prior discussion of the research idea with an NSF program officer (16%). Awardees were less likely than declinees to identify GRESE as an important form of assistance, but were more likely to identify discussing research plans with an NSF program officer, examining a successful proposal, and receiving clerical support.

ROW applicants rated having a colleague review their proposal for content, format, and presentation, and using GRESE, as more important than did direct applicants. The latter were more likely to identify discussing research plans with an NSF program officer, and clerical support, as keys to preparing a good proposal.

F. Perceptions of ROW and NSF

1. Awareness of ROW

Sixty percent of respondents who applied through regular program channels were also aware of ROW before the interview. Only a third of nonapplicants were aware of ROW.

Most women first heard about ROW through publications or campus research offices. Fifteen percent of ROW applicants first heard about the program and were encouraged to submit an ROW proposal by an NSF program officer. Two-thirds of ROW women said that it was easy to obtain information about NSF project funding.

2. "Stigma" Concern

Nearly half of the respondents who were knowledgeable about ROW and who submitted proposals felt that their colleagues viewed the ROW award as easier to obtain, less important or less meaningful than a regular disciplinary award. This perception is commonly referred to as a "stigma."

Since there were varying degrees of awareness about the ROW program, perceptions of stigma were considered to be valid only if both the respondent and her colleagues knew something about ROW before the interview. Seventy-seven percent of the ROW sample and 56% of the direct sample met these criteria. Within

this combined aware-of-ROW group, 47% said their colleagues regarded an ROW award differently from a regular award and had negative impressions of ROW.

The fields of research where stigma was most prominently mentioned were physical sciences (65%), mathematical sciences (52%), and geosciences (48%). Stigma was least often perceived by women in biological sciences (40%), behavioral sciences (40%), and engineering (35%).

The perception of a stigma did not appear to make much of a difference to women who applied through the ROW program. Among ROW applicants who perceived a stigma, 40% said ROW was very important in their decision to submit a research proposal, 60% would definitely submit another proposal through ROW if eligible, and 56% would definitely recommend ROW to eligible women. Nearly half of ROW awardees who perceived a stigma said that a major impact of the award was increased respect of their colleagues.

The perception of a stigma also does not appear to have influenced eligible women to avoid ROW and apply through regular channels instead. Less than 7% of direct applicants cited a stigma-related reason for not applying through the ROW program. Further, among the women who perceived a stigma, 76% would definitely recommend ROW to eligible women. An ROW stigma was virtually unknown among nonapplicants who were aware of the program, indicating that stigma did not play a role in their not applying for a research grant.

3. Post-decision Perceptions of ROW

After having gone through the ROW proposal process, 77% of the ROW awardees and half of the declinees would definitely consider submitting another proposal through the program, if they were eligible. Fifteen percent (mostly declinees) definitely would not consider going through ROW again.

Nearly all of the ROW awardees and 72% of the declinees would recommend the program to eligible women. Twenty-one percent of ROW declinees would discourage women from applying through ROW.

Clear differences were apparent between ROW awardees and declinees: awardees made three times more positive than negative comments, while declinees made twice as many negative comments. Nearly a quarter of declined ROW applicants expressed frustration and discouragement and about 10% believed that the review process was biased or inconsistent. Communication difficulties, such as inadequate feedback regarding the status of their proposal or reasons for decline, misunderstood or misleading information, and confusion about the difference between ROW and regular programs accounted for about 10% of both declinee and awardee comments.

As a point of comparison for comments about the program, ROW applicants were asked what they thought about NSF, independent of ROW. Again, awardees were overwhelmingly positive; ROW declinees, however, were considerably less negative about NSF in general than about ROW. Their negative feelings were apparently focused more on the ROW program than on the Foundation.

4. Concern about Disadvantage in the Proposal Process

Nearly half of the women who participated in the study perceived that they were at a general disadvantage compared to men when applying for research grants from NSF. Such impressions were more common among declinees and nonapplicants than among awardees. The reasons cited varied widely but generally related to underrepresentation of women in their field and isolation from the research "network".

An examination of all NSF research proposals decided upon in 1987 does not support the perception of a gender disadvantage. The ROW program in particular, and NSF in general, gave slightly preferential treatment to women applicants, after reviewer ratings are taken into account. Regardless of the applicant's gender, proposals with very high ratings are almost always funded; proposals with very low ratings are seldom funded. However, in the mid-range of competitive ratings (where program officer judgement comes into play the most), ROW proposals had up to a 35% better chance of being awarded than similarly rated proposals from men. Women applying directly also received a preference in award decisions, but to a lesser extent.

The average summary reviewer rating of ROW proposals was the same as that of proposals from men seeking their first NSF grant, indicating comparable proposal quality. Proposals from new women applicants to regular disciplinary programs actually received slightly higher average ratings than those from first-time men.

G. Career Development

1. Mentorship

Overall, 56% of respondents had a mentor at some point in their career. In the study, a mentor was defined as "a person who takes particular interest in your career and has been willing to provide guidance and/or support for you". Direct applicants were more likely to have had a mentor (63%) than either ROW applicants (53%) or nonapplicants (44%). Among all applicants, more awardees had mentors than declinees. Mentors influenced women's decisions to pursue academic research by providing general support, advice and information (61%); role modeling (16%); and tangible assistance such as money, research tools and resources (16%).

The degree to which women had mentors and the role that they played differed by field of science. In computer sciences and engineering, where there are few female faculty members, 35% and 43% respectively had mentors, compared with a rate of 56% overall. Women in the geosciences and the behavioral sciences were most likely to indicate that their mentors performed the role modeling function (23%). On the other hand, women in engineering and physical and mathematical sciences made relatively few references to their mentors providing them with a role model. Regardless of field, 84% of the respondents' mentors had been male.

Seventy-two percent of survey respondents were themselves mentors. In that capacity they dealt with a variety of issues with their female protégées. Mentors and protégées most often discussed balancing a career and home life and building confidence. Other topics of concern included obtaining information on career opportunities, how to do good research, and breaking into academia. Four percent said they had discussed the issues of discrimination, lack of male support, or harassment by male faculty.

2. Perceived Impediments to Conducting Research

Two-thirds of the ROW and direct program applicants and 80% of nonapplicants were not spending as much time conducting research as they would like. Professional responsibilities generally associated with a faculty position accounted for four of the six major impediments faced by women who would like to spend more time conducting research. The six most often cited impediments were: availability of funding (70%), committee assignments (61%), excessive teaching load (61%), other administrative duties (52%), inadequate clerical support (50%), and family responsibilities (47%).

Respondents were asked which of the impediments they had cited were more a problem for women than men; 79% of the women who cited family responsibilities as an impediment said it was more a problem for women than men. Others cited as gender-related included: committee assignments (31%), excessive teaching load (25%), and availability of funding (24%).

H. Suggestions for Improving NSF Support of Female S&Es

Over 80% of the interviewed women offered suggestions, many several suggestions, for improving NSF support of female scientists and engineers. One-third suggested providing "more money/support", though the respondents did not clarify whether they meant the additional funding should be for research in general or specifically targeted for women. The need for more information on research opportunities, such as publicity and outreach, was the next most common (15%). Twelve percent of the

suggestions entailed additional or expanded programs targeted for women, mostly continuation of ROW or ROW-like programs. Ten percent suggested training on how to prepare a research proposal, especially at the graduate student level. Another 10% concerned the review process, specifically involving more female reviewers.

* * * * *

Addendum: Additional Observations from Site Visits

As part of the process of developing the survey questionnaire, the authors held discussions during mid-1988 with groups of women faculty (totaling approximately 90 persons) at eight universities having differing levels of research activity. While most of the points raised in the discussions were later addressed by the survey findings, these additional matters are presented here as part of the context of the program and findings:

1. Many women indicated that NSF disciplinary program officers had given them mistaken information about ROW, were not aware of the program or had steered them away from it. In addition, some complained that reviewers' comments about their proposals did not adequately take into account applicants' ROW status, or that reviewers were not well informed about program objectives and eligibility.

2. Women associated with medical schools were generally more concerned about and critical of their research opportunities and tenure status than women on faculties of arts and sciences within the same institutions. Researchers in the medical sciences were less likely to be in a tenured or tenure-track position, more likely to believe that administrators were biased against women in providing such positions, and more wary of receiving a grant from a program targeted for women because colleagues would consider such a grant second-rate.

3. Across the eight institutions there was a wide variation in the amount and sophistication of proposal preparation assistance. Within each institution there appeared to be a sizeable gap between what administrators said they offered and how potential proposers viewed their services when they were aware of them. New investigators generally did not take advantage of many services because they were not aware of them or had preconceived notions of the quality of assistance available.

Notes and References:

1. Requests for technical information or comments on this report may be directed to Bob Webber or Linda Parker, NSF Program Evaluation Staff, Room 425, 1800 G St. N.W., Washington, D.C. 20550.

2. The most recent brochure describing Research Opportunities for Women and related programs may be obtained by writing NSF's Forms and Publications Unit (address on inside front cover of this report).

3. A description of NSF's proposal review system, the results of a survey of 9,500 applicants about it, and factors in award success are presented in NSF 88-4, "Proposal Review at NSF: Perceptions of Principal Investigators", also available from NSF's Forms and Publications Unit.

4. A summary of the PI Survey report mentioned in note 3, with additional commentaries, may be found in the Winter 1989 issue (Vol. 14, Nr. 1) of Science, Technology and Human Values.

5. A new perspective on how women make career choices in science and why they can experience difficulties as they try to develop their careers is provided in an article by Gabriel Bar-Haim and John M. Wilkes: "A Cognitive Interpretation of the Marginality and Underrepresentation of Women in Science", Journal of Higher Education, Vol, 60, No.4 (July/August 1989).

The design of this project and of the survey, sample selection, interpretation of the findings and preparation of the report were done by Bob Webber and Linda Parker under the direction of Jim McCullough, all of NSF's Program Evaluation Staff. The telephone survey was conducted under contract by the Public Policy Resources Laboratory of Texas A & M University under the direction of Jim Dyer and Craig Blakely. T. Samantha Solomon of Solomon Associates assisted with survey design and interpretation. Bill Commins of the Program Evaluation Staff performed the analysis of reviewer ratings.

Appendix A

Survey Methods

A. Sampling Procedures

The ROW and direct samples were selected from separate lists of all proposals submitted by female PIs and decided upon by NSF from 1985 through 1987. The lists were alphabetized by PI name and every nth name was drawn from a randomly chosen starting point. Potential stratification variables such as field of science were found to reflect the population adequately.

Obtaining a sample of nonapplicants was more challenging since a list is not available of eligible women who were interested in research, but had never applied for an NSF grant. We turned to The Faculty Directory of Higher Education, a comprehensive listing of academics in science and engineering. Female names were chosen from science and engineering volumes of the Directory and screened in the following manner: (a) individuals had to be affiliated with institutions that normally receive NSF funds, (b) they could not be on the list of NSF PIs, (c) during the initial phase of the interview they indicated that they indeed had not applied for an NSF grant since 1980, and (d) they were interested in doing research.

B. Questionnaire Development and Administration

The issues addressed in the survey and the format of the questions asked during the interview were formulated through a series of site visits with female faculty and administrators at research universities, meetings with NSF program officers, review by the Office of Management and Budget (OMB), and a pilot test of the questionnaire.

The telephone interviews were conducted in two phases. The initial phase involved 140 interviews conducted between October and November 1988 using questionnaires that had been given conditional approval by OMB. Following minor revisions, the remaining 547 interviews were conducted between March and May of 1989. There were no substantial response differences between the two periods, so they were combined for analytic purposes.

Ninety-nine percent of the women contacted answered all appropriate questions in the interview. We interpret this high completion rate as an indication of the female faculty's interest in research support issues.

Appendix B

Fields of Science and Engineering Among Sample Groups

		Interview Samples				Female PIs
		Total	ROW	Regular	Nonapps	Reg/M-R **
Physical	N	82	36	39	7	235
	%	14%	15%	14%	9%	5%
Mathematical	N	46	27	10	9	181
	%	8%	11%	4%	12%	4%
Computer	N	14	3	9	2	149
	%	2%	1%	3%	3%	3%
Engineering	N	40	16	19	5	324
	%	7%	7%	7%	6%	7%
Geosciences	N	41	19	18	4	834
	%	7%	8%	7%	5%	19%
Biosciences	N	219	96	114	9	1,626
	%	37%	40%	42%	12%	37%
Behavioral	N	151	46	63	42	1,018
	%	25%	19%	23%	54%	23%
TOTAL	N	593	243	272	78	4,367

** Regular merit-reviewed proposals from female PIs awarded or declined in FY 1985-1987 (ROW proposals excluded).

NOTE: The differences between totals reported in Tables 1 and 2 is accounted for by "Missing" or "Other" field of research reported by the respondents.

APPENDIX C: Telephone Survey
(ROW Applicants' Version)

OMB No. 3145-0108
Approved for use t. ough 07/31/89

edit check _____

Time start: ____:____ Time end: ____:____ Minutes: |____|____|

Sample group assignment: |____| Interviewer: |____|____|____|____|

Major field code: |____|____| Observation #: |____|____|____|____|

Institution code: |____|____|____|____|
d4 d5 d6 d7

ROW AWARDS/DECLINES

Hello. My name is _____ from the Public Policy Resources Lab at Texas A&M University. We are helping the National Science Foundation to evaluate their program known as Research Opportunities for Women. According to the information we have between 1985 & 1987 ... [REFER TO PROPOSAL PROFILE]. Is that correct? [IF INCORRECT, ASCERTAIN CORRECT CLASSIFICATION] I'd like to ask several questions about your experiences with NSF, and how NSF can improve research support for women.

The interview will take about 20 minutes. Is it convenient to talk with you now, or should we schedule a later time?
Your responses will be treated confidentially. Your future contacts with NSF cannot be influenced by your responses. Our records regarding your proposal activity with the foundation are complete only between 1985 and 1987.
So, the first thing I'd like to ask is...

R1. Since October, 1987, how many grant proposals have you submitted to NSF as a principal or co-principal investigator?

|_____| [DON'T KNOW = 8, REFUSE/NA = 9]
[RECORD VERBATIM]
[IF NONE, SKIP TO R3]

R1a. Of those, how many were to the NSF's "ROW" program?

|_____| [DON'T KNOW = 8, REFUSE/NA = 9]
[RECORD VERBATIM]

R2. Could you tell me how many of the NSF proposals you've submitted since October, 1987 are pending, awarded, or declined?

a) |_____| pending [DON'T KNOW = 98, REFUSE/NA = 99]

b) |_____| awarded [DON'T KNOW = 98, REFUSE/NA = 99]

c) |_____| declined [DON'T KNOW = 98, REFUSE/NA = 99]

R3. We are also interested in your proposal activity with the foundation prior to 1985. Between 1980 and 1985, about how many grant proposals did you submit to NSF as a principal or co-principal investigator?

|_____|_____| [DON'T KNOW = 98, REFUSE/NA = 99]
[RECORD VERBATIM]
[IF NONE, SKIP TO R5]

R4. How many of those between 1980 and 1985 were awarded?

|_____|_____| [DON'T KNOW = 98, REFUSE/NA = 99]
[RECORD VERBATIM]

R5. About how many times have you served as a mail or panel reviewer for NSF proposals?

|_____|_____| [DON'T KNOW = 98, REFUSE/NA = 99]
[RECORD VERBATIM]

R6. [MARK WITHOUT ASKING IF R1 = 1]
Was the ROW proposal your first proposal to NSF?

Yes	1	
No	2	[SKIP TO R8]
Don't know	8	[SKIP TO R8]
Refuse/NA	9	[SKIP TO R8]

R7. What would you say is the main reason that you did not submit a proposal to NSF previously?

_____ |_____|_____|

_____ |_____|_____|

R8. At the time you submitted your ROW proposal... [READ LIST]

	Yes	No	Don't Know	Refuse/ NA
a) Had you previously been a principal or co-principal investigator on a Federal grant?	1	2	8	9
b) At the time you submitted the ROW proposal were you returning to your career after an interruption?	1	2	8	9

c) [IF YES] Why was there a career interruption? [FIELD CODE.]

family	1
teaching	2
took another job	3
husband's job	4
denied tenure	5
other	6

[DESCRIBE] _____|____|____|

R9. How did you first hear about the ROW grant program? [FIELD CODE.]

NSF Program Office	01
Campus research office	02
Dean	03
Department Head	04
Colleagues	05
Conference	06
Ad or notice in publication	07
Other	08

[DESCRIBE] _____|__|__|

Don't know	98
Refuse/NA	99

R9a. And about what year was that?

|_____|_____|

Don't know 98
Refuse/NA 99

R10. Who first suggested that you submit a proposal to ROW? [FIELD CODE RESPONSE]

self 1
colleague 2
NSF disciplinary program officer 3
ROW program manager 4
Other 5 --> _____ [DESCRIBE]

Don't know 8
Refuse/NA 9

R11. Why did you decide to apply through the ROW program instead of directly through the regular NSF programs? Feel free to provide multiple answers. [FIELD CODE]

met eligibility criteria for ROW 1
applied to ROW as one of several funding alternatives (eg. applied to both) 2
better chance of success at ROW 3
advised to apply by NSF program officer 4
Other 5
[DESCRIBE]_____|_____|_____|

_____|_____|_____|

Don't know 98
Refuse/NA 99

R12. How important would you say that the existence of the ROW program was in your decision to submit a research proposal when you did? Would you say it was [READ LIST]:

Very important 1
Moderately important 2
Slightly important, or 3
Not important at all in your decision to submit a research proposal at that time 4

Don't know 8
Refuse/NA 9

R13. What were your general impressions of the ROW program before submitting your proposal? [RECORD VERBATIM]

a) _____ |_____|_____|

b) _____ |_____|_____|

Don't know 98
Refuse/NA 99

R14. Would you say that information about how to go about getting a project funded by NSF was [READ LIST]:

very easy to obtain,	1
somewhat easy to obtain,	2
neither easy nor hard to obtain,	3
fairly hard to obtain, or	4
very hard to obtain?	5
Don't know/no contact	8
Refuse/NA	9

R15. How long did it take you to prepare your ROW proposal for NSF?

1 month or less	1	5 months	5
2 months	2	6 or more months	6
3 months	3	Don't know	8
4 months	4	Refuse/NA	9

R16. What did you learn from your experience applying for the ROW research grant during the 1985-87 period? [PROMPT WITH What else? RECORD VERBATIM.]

_____|_____|_____|

_____|_____|_____|

Don't know	98
Refuse/NA	99

R17. How would you characterize your experience with the ROW program. [PROBE FOR DESCRIPTIVE ADJECTIVES. PROBE: Do you have any further thoughts regarding your experience with ROW? PROBE FOR COMPLETE RESPONSE] [RECORD VERBATIM]

_____|_____|_____|

_____|_____|_____|

Don't know	98
Refuse/NA	99

R18. How would you characterize your experiences with NSF other than ROW? [PROBE FOR DESCRIPTIVE ADJECTIVES. PROBE FOR COMPLETE RESPONSE. RECORD VERBATIM.]

a) _____ |_ ___|_____|

b) _____ |_____|_____|

Don't know	98
Refuse/NA	99

R19. To what extent would you recommend the ROW program to eligible women? Would you [READ LIST]:

definitely recommend it,	1
mildly recommend it,	2
mildly discourage it, or	3
definitely discourage it?	4
Don't know	8
Refuse/NA	9

R20. Having gone through the ROW proposal process, if you were eligible, how seriously would you consider submitting a proposal to ROW again? [DO NOT READ LIST]

definitely consider	1
might consider	2
definitely would not consider	3
Don't know	8
Refuse/NA	9

R21. Do you think that your colleagues regard an ROW award differently from a regular award?

Yes	1	
No	2	[SKIP TO R22]
Colleagues don't know about ROW	3	[SKIP TO R22]
Don't know	8	[SKIP TO R22]
Refuse/NA	9	[SKIP TO R22]

R21a. In what way? _____ |__|__|
[RECORD VERBATIM]
_____ |__|__|

[IF 1987 PLANNING GRANT APPLICANT: IF AWARDEE, SKIP TO R23
IF DECLINEE, SKIP TO R25]

[IF 1987 OR LATER ROW APPLICANT: IF AWARDEE, SKIP TO R26,
IF DECLINEE, SKIP TO R27.]

[IF 1985 OR 1986 ROW APPLICANT, ASK]:

R22. In 1987, ROW was expanded to include small grants to support activities associated with planning a research project. How useful would such a small planning grant have been, had it been available at the time you applied for research support? [READ LIST]

Very useful	1
Moderately useful	2
Not very useful	3
Not useful at all	4
Don't know	8
Refuse/NA	9

<----------[IF ROW AWARDEE, SKIP TO R26]----------
[IF ROW DECLINEE, SKIP TO R27]

[IF 1987 PLANNING GRANT AWARDEE, ASK]:

R23. I am going to ask you about some areas in which you may have been affected as a result of having received an ROW Planning Grant. Please indicate for each item whether you feel the impact of the award has been great, moderate, none at all, or too soon to tell.

	Great	Moderate	None	Soon	D/K	RF/NA
a. In terms of helping you find collaborators for future research, would you say the impact of the award was... [READ OPTIONS.]?	1	2	3	4	8	9
b. How about for helping you establish the precise direction of your future research?	1	2	3	4	8	9
c. For helping you discover the major weaknesses in your research idea?	1	2	3	4	8	9
d. For helping you discover that you needed to spend more time developing your idea?	1	2	3	4	8	9

e.	In terms of providing a good proposal writing experience, would you say the impact of the award was... [READ OPTIONS.]	1	2	3	4	8	9
f.	How about for encouraging you to seek further research funding?	1	2	3	4	8	9
g.	For helping you get tenure or promotion?	1	2	3	4	8	9
h.	For helping you get a salary increase?	1	2	3	4	8	9
i.	Are there any other ways in which you have been affected as a result of the planning grant?	1	2	3	4	8	9

[PROMPT: Please describe them to me. RECORD VERBATIM]_____|_____|_____|

_____|_____|_____|

R24. As a result of the planning grant

a.	Are you currently preparing or did you submit a research proposal to ROV?	1	2	8	9
b.	Are you currently preparing or did you submit a research proposal through regular NSF program?	1	2	8	9
c.	Are you currently preparing or did you submit a proposal for another funding source?	1	2	8	9

[PROMPT: Please describe them to me. RECORD VERBATIM]_____|_____|_____|

_____|_____|_____|

<----------[SKIP TO R30]---------->

[IF 1987 PLANNING GRANT DECLINEE, ASK]:

R25. I am going to ask you about some areas in which you may have been affected as a result of not having received an ROV Planning Grant. Please indicate for each item whether you feel the impact of the award decision has been great, moderate, none at all, or too soon to tell.

		Great	Moderate	None	Soon	D/K	RF/NA
a.	In terms of helping you find collaborators for future research, would you say the impact of the experience was... [READ OPTIONS.]?	1	2	3	4	8	9
b.	How about for helping you refine the direction of your future research?	1	2	3	4	8	9
c.	For helping you discover the major weaknesses in your research idea?	1	2	3	4	8	9
d.	For helping you discover that you needed to spend more time developing your idea?	1	2	3	4	8	9
e.	How much impact did the decline have in terms of discouraging you from seeking further research funding?	1	2	3	4	8	9
f.	How much impact did it have on your ability to get tenure or promotion?	1	2	3	4	8	9
g.	How much impact did it have on your chance of receiving a salary increase?	1	2	3	4	8	9
h.	Are there any other ways in which you have been affected as a result of not having received the planning grant?	1	2	3	4	8	9

[PROMPT: Please describe them to me. RECORD VERBATIM] _____ |_____|_____|

<----------[SKIP TO R30]---------->

[IF ROW AWARDEE, ASK]:

R26. I am going to ask you about some areas in which you may have been affected as result of having received an ROW award. Please indicate for each item whether you feel the impact of ROW has been great, moderate, none at all, or too soon to tell.

		Great	Moderate	None	Soon	D/K	RF/NA
a)	In terms of enhancing your understanding of how to locate research funding, would you say the impact of the award was... [READ OPTIONS]	1	2	3	4	8	9
b)	How about for enhancing your understanding of the NSF proposal process?	1	2	3	4	8	9
c)	For increasing your ability to spend time doing research?	1	2	3	4	8	9
d)	In terms of increasing the respect of you colleagues would you say the impact of the ROW award was [READ OPTIONS]	1	2	3	4	8	9
e)	How about for improving your reputation in your field?	1	2	3	4	8	9
f)	For increasing your access to laboratory equipment or instrumentation?	1	2	3	4	8	9
g)	For increasing your available support for students?	1	2	3	4	8	9
h)	For enhancing your publication record?	1	2	3	4	8	9
i)	In terms of providing a good proposal writing experience, would you say the impact of the award was... [READ OPTIONS]	1	2	3	4	8	9
j)	How about for encouraging you to seek further research funding?	1	2	3	4	8	9
k)	For helping you get tenure or promotion?	1	2	3	4	8	9
l)	For helping you get a salary increase?	1	2	3	4	8	9
m)	Are there any other ways in which you have been affected as a result of having received the ROW award?	1	2	3	4	8	9

[PROMPT: Please describe them to me. RECORD VERBATIM.] _____ |_____|_____|

_____ |_____|_____|

----------[SKIP TO R30]---------->

[IF ROW DECLINEE, ASK]:

R27. Why do you think that your proposal was not funded?

_____ |_____|_____|

[RECORD VERBATIM]

Don't know 98
Refuse/NA 99

R28. What did you do after your proposal was declined? [READ LIST]

		Yes	No	Don't Know	Refuse/ NA
a)	Did you contact NSF to question or try to understand their decision?	1	2	8	9
b)	Did you revise and resubmit your proposal to the ROW program?	1	2	8	9
c)	Did you look for funding elsewhere?	1	2	8	9
d)	Did you continue working on the idea without funding?	1	2	8	9
e)	Did you respond in any other ways?	1	2	8	9

[PROMPT: Please describe them to me. RECORD VERBATIM]_____|_____|_____|

_____|_____|_____|

R29. I am going to ask you about some areas in which you may have been affected as result of not having received the ROW award. Please indicate for each item whether you feel the impact of the award decision has been great, moderate, none at all, or too soon to tell.

		Great	Moderate	None	Soon	D/K	RF/NA
a)	In terms of enhancing your understanding of how to locate research funding, would you say the impact of the experience was... [READ OPTIONS]	1	2	3	4	8	9
b)	How about for enhancing your understanding of the NSF proposal process?	1	2	3	4	8	9
c)	How much impact did the decline have on your ability to get tenure or promotion?	1	2	3	4	8	9
d)	How much impact did it have on your chance of receiving a salary increase?	1	2	3	4	8	9
e)	How much impact did it have on the level of respect your colleagues have for your work?	1	2	3	4	8	9
f)	In terms of providing a good proposal writing experience, would you say the impact of applying for the award was... [READ OPTIONS]	1	2	3	4	8	9
g)	How much impact did the decline have in terms of discouraging you from seeking further research funding?	1	2	3	4	8	9
h)	Are there any other ways in which you have been affected as a result of not having received the ROW award?	1	2	3	4	8	9

[PROMPT: Please describe them to me. RECORD VERBATIM.] _____ |_____|_____|

_____ |_____|_____|

[ASK OF ALL RESPONDENTS]

O. When applying for research grants from NSF in your field, do you feel women have a great advantage, some advantage, are on equal par compared to men, some disadvantage, or a great disadvantage?

great advantage	1	
some advantage	2	
on equal par	3	
some disadvantage	4	
great disadvantage	5	
Don't know	8	[SKIP TO R32]
Refuse/NA	9	[SKIP TO R32]

R31. Why do you feel this way?

_____ |_____|_____|

_____ |_____|_____|

Don't know	98
Refuse/NA	99

R32. Now let's turn to some questions about improving research opportunities. How do you think NSF can improve its support of female scientists and engineers? Feel free to provide multiple answers. [FIELD CODE]

more information on research opportunities	1
more planning grant or seed money options	2
training for NSF program officers regarding opportunities for women	3
more female proposal reviewers	4
sponsoring training for graduate students on how to obtain research support	5
provide more money/support	6
Other	7

[DESCRIBE]:_____|_____|_____|

_____|_____|_____|

R33. Thinking of your own research opportunities, are you spending as much time conducting research as you would like?

Yes	1
No	2
Don't know	8
Refuse/NA	9

R34. I'm going to read a list of things that might make it difficult to spend time doing research. Please tell me for each item whether or not it is a problem for you. [READ LIST.]

		Yes	No	Don't Know	Refuse/ NA	N12-Most important barriers for women.
a)	Does availability of research funding limit your ability to do research?	1	2	8	9	a. 1
b)	How about an excessive teaching load?	1	2	8	9	b. 1
c)	Inadequate clerical support?	1	2	8	9	c. 1
d)	Insufficient support from TA's & graders?	1	2	8	9	d. 1
e)	Does an excessive advising load limit your ability to do research?	1	2	8	9	e. 1
f)	How about committee assignments?	1	2	8	9	f. 1
g)	Other administrative duties?	1	2	8	9	g. 1
h)	Do public service obligations limit your ability to do research?	1	2	8	9	h. 1
i)	Family responsibilities?	1	2	8	9	i. 1
j)	Is there anything else that limits your ability to do research?	1	2			j. 1

[DESCRIBE]:_____|_____|_____|

R35. [IF NO "YES" ANSWERS ABOVE, SKIP TO R36. OTHERWISE, ASK:]
Of all the barriers you just indicated might be problems, which, if any, would you say are more of a problem for women than for men? Would you like me to read your responses again? [IF YES, READ ALL "YES" AND "OTHER" RESPONSES AGAIN, PAUSING AFTER EACH FOR RESPONDENT'S REPLY.]

[CIRCLE NUMBER ABOVE FOR BARRIERS NAMED]

R36. I am going to read a list of the kinds of help some researchers receive in preparing proposal(s), I would like you to tell me which ones, if any, you receive in writing a proposal. [READ LIST]

	Yes	No	Don't Know	Refuse/ NA	R042 -ASSISTANCE
Would you receive...					
a) clerical support in preparing a proposal?	1	2	8	9	a. 1
b) budget preparation assistance?	1	2	8	9	b. 1
c) a review of proposal content by a colleague?	1	2	8	9	c. 1
d) a review of proposal content by a sponsored research office official?	1	2	8	9	d. 1
In preparing a proposal, would you receive...					
e) format or presentation guidance from a colleague?	1	2	8	9	e. 1
f) format or presentation guidance from a sponsored research office official?	1	2	8	9	f. 1
g) seed money to collect preliminary data?	1	2	8	9	g. 1
In preparing a proposal, have you used assistance from...					
h) a discussion with the NSF program manager?	1	2	8	9	h. 1
i) comments from reviewers on an unsuccessful proposal?	1	2	8	9	i. 1
j) a successful NSF proposal to help format your proposal?	1	2	8	9	j. 1
k) the NSF grant proposal preparation guide?	1	2	8	9	k. 1
l) Is there any other form of assistance you have found helpful when preparing proposals?	1	2	8	9	l. 1

[DESCRIBE]: _____|_____|_____|

_____|_____|_____|

37. Of the kinds of assistance you just listed, what are the TWO most important forms of assistance in preparing proposals? Would you like me to read your responses again? [IF YES, READ ALL "YES" AND "OTHER" RESPONSES AGAIN]

[CIRCLE NUMBER ABOVE FOR TYPES OF ASSISTANCE USED.]

I'd like to ask a few questions now about your history of research support.

P38. Other than NSF, what are the major sources of funding for your research interests.

[RECORD VERBATIM AND WRITE IN CLASSIFICATION CODE FROM LIST BELOW.]

		CLASS. CODE			CLASS. CODE
a)	_____	_____	b)	_____	_____
c)	_____	_____	d)	_____	_____
e)	_____	_____	f)	_____	_____

Classification Codes:

Federal agencies	
NASA	1
DOE	2
NIH	3
ONR	4
OTHER FED AGENCIES	5
State	6
Private foundation	7
Industry	8
Other	9

R39. About how many grant proposals have you submitted to non-NSF funding sources as a principal or co-principal investigator since 1980? Do not include small grants you may have received from your university or department.

|_____|_____| [DON'T KNOW = 98, REFUSE/NA = 99]
[RECORD VERBATIM]

R40. How many awards in which you were principal investigator or co-principal investigator have you received from non-NSF sponsors since 1980? Again, do not include small grants you may have received from your university or department.

|_____|_____| [DON'T KNOW = 98, REFUSE/NA = 99]
[RECORD VERBATIM]

R41. How much difficulty do you have understanding differences between the types of research NSF supports and research supported by other federal agencies in your field? [READ LIST]

great difficulty	1
moderate difficulty	2
slight difficulty, or	3
no difficulty?	4
Don't know	8
Refuse/NA	9

R42. Have you had a mentor -- that is, a person who has taken a particular interest in your career and has been willing to provide guidance and/or support for you?

Yes	1	
No	2	[SKIP TO R45]
Don't know	8	[SKIP TO R45]
Refuse/NA	9	[SKIP TO R45]

R43. [IF YES] How did your mentor influence your decision to pursue academic research?

_____ |_____|_____|

_____ |_____|_____|

Don't know 98
Refuse/NA 99

R44. [RECORD SEX OF MENTOR. IF SEX HAS NOT BEEN MENTIONED, ASK]: Is your mentor male or female?

Male 1
Female 2

Don't know 8
Refuse/NA 9

R45. For how many female students and other female faculty members have you served as a mentor, if any?

|_____|_____| [DON'T KNOW = 98, REFUSE/NA = 99]----> [SKIP TO R46]
[IF NONE, SKIP TO R46]

R45a. From your perspective as a mentor, what issues affecting women do you have to address? [RECORD VERBATIM]

a) _____ |_____|_____|

b) _____ |_____|_____|

c) _____ |_____|_____|

Now I have a few final questions about your background and your current career status.

6. Are you currently employed in a medical school?

Yes 1
No 2

Don't know 8
Refuse/NA 9

R47. What is your highest academic degree?

BA/BS 1
MA/MS 2
PhD 3
MD 4
EdD 5
Other 6
[DESCRIBE] _____|____|____|

Don't know 8
Refuse/NA 9

R47a. What institution did you receive it from?

_____|_____|_____|_____|_____|

Don't know 9998
Refuse/NA 9999

R47b. What year did you receive it?

|_____|_____| year

Don't know 8
Refuse/NA 9

R47c. What field was it in?

Field: _____|____|____|

Don't know 98
Refuse/NA 99

R48. [RECORD ANSWER. DO NOT ASK IF OBVIOUS.] What is your major field of research now?

_____|_____|_____|_____|_____|
[RECORD VERBATIM]

Don't know 98
Refuse/NA 99

R49. [RECORD ANSWER. DO NOT ASK IF KNOWN.] Would you describe your current position as primarily teaching or research oriented?

teaching 1
research 2

Don't know 8
Refuse/NA 9

R50. [RECORD ANSWER. DO NOT ASK IF KNOWN.] Is it a tenure track position?

Yes 1
No 2 [SKIP TO R52]

Don't know 8
Refuse/NA 9

R51. Do you have tenure?

Yes 1
No 2

Don't know 8
Refuse/NA 9

R52. That concludes this interview. Do you have any additional comments which you feel are appropriate for this study?

_____

_____

_____

R53. Would you like to receive a copy of the final report from this study of the ROW program?

Yes 1 --> [CONFIRM ADDRESS. IF INCORRECT, RECORD CORRECT ADDRESS ON BACK PAGE.]
No 2

On behalf of the National Science Foundation, I would like to thank you for participating in this study. Your responses will be of great interest to the Foundation.

NATIONAL SCIENCE FOUNDATION
WASHINGTON, D.C. 20550

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